

Claims

1. An electrical signal equaliser comprising a first transversal filter part with a chain of delay elements, individually adjustable signal weighting devices and a signal adding device, wherein the inputs of the weighting devices are each connected to one of said delay elements and the outputs are each connected to said adding device, wherein a signal splitting device is comprised connecting the first output to said first transversal filter part and connecting the other output to a second transversal filter part, that a signal combining device is comprised connected to the outputs of the adding devices of the two filter parts and that signal inverting means are comprised for inverting the polarity of the output signals of one of said filter parts.
2. An electrical signal equaliser according to claim 1, wherein the signal inverting means are realised as a signal inverter, that is connected into the line before or after the second filter part.
3. An electrical signal equaliser according to claim 2, wherein the signal inverter is integrated within the signal combining device that is therefore realised as differential decision circuit.
4. An electrical signal equaliser according to claim 2, wherein the signal weighting means are realised as signal attenuators.

5. An electrical signal equaliser according to claim 2, wherein the signal weighting means are realised as variable amplifiers.
6. An electrical signal equaliser according to claim 1, wherein the signal inverting means of the second filter part are realised such, that weighting means in the first filter part perform each a positive weighting and the weighting means in the second filter part perform each a negative weighting.
7. An electrical signal equaliser according to claim 1, wherein a monitoring unit for detection of signal waveform form deviations is comprised that is adapted to generate control signals for control of the signal weighting means.
8. An optical receiver with opto-electrical signal converter means and an electrical signal equaliser, **wherein**
 - the electrical signal equaliser comprises two transversal filter parts with each a number of delay elements, individually adjustable signal weighting devices and a signal adding device, wherein each the inputs of the weighting devices are each connected to one of said delay elements, and the outputs are each connected to one of said adding devices,
 - a signal splitting device is comprised for providing said two transversal filter parts with each an individual signal,
 - a signal combining device is comprised connected to the outputs of the adding devices of the two filter parts and

- signal inverting means are comprised for inverting the polarity of the output signal of one of said filter parts.
9. An optical receiver according to claim 8, wherein the splitting means are realised as electrical splitter and that the opto-electrical signal converter means are realised as a unique opto-electrical signal converter, wherein said opto-electrical signal converter is connected before the electrical splitter.
10. An optical receiver according to claim 8, wherein the splitting means are realised as an optical splitter and that the opto-electrical signal converter means are realised as two individual opto-electrical signal converters, wherein each output of said optical splitter is connected to one of said individual opto-electrical signal converters, that are each further connected to one of said filter parts.
11. A method for equalising an electrical input signal, wherein said signal is fed to a first transversal filter part with a number of delay elements to obtain a number of differently delayed signals, wherein said differently delayed signals are individually weighted and added after being weighted to generate a first output signal, **wherein**
- an identical input signal is fed to a second filter part of similar structure according to the structure of the first filter part for generating a second output signal,
 - in both filter parts, only unipolar weightings are performed and

- the first and the second output signals are combined in a differential way for further processing in a decision circuit.